

Respirator Selection

WAC 296-842-130

Summary

YOUR RESPONSIBILITY:

To select and provide respirators that are appropriate for the hazard, user, and worksite conditions



Exemption:

This section does **not** apply to voluntary respirator use.

See WAC 296-842-110 of this chapter for voluntary use program requirements.

You must

Select and provide appropriate respirators

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Select and provide appropriate respirators

Important:

See chapter 296-841, Respiratory Hazards, for:

- Hazard evaluation requirements. Evaluation results are necessary for respirator selection.
- A list of substance-specific rules that may also apply to you. Those listed rules have additional respirator selection requirements.



Helpful Tool:

Information about Respirator Selection and Classification

This document provides guidance about respirator selection and classification. You can find a copy in the Resources section of this chapter.

You must

- Select and provide, at no cost to employees, appropriate respirators for routine use, infrequent use, and reasonably foreseeable emergencies (such as escape, emergency, and spill response situations) by completing the following process:

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Respirator Selection Process

- Step 1:** If your only respirator use is for escape, skip to Step 8 to select appropriate respirators.
- Step 2:** If the respiratory hazard is a biological aerosol, such as TB (tuberculosis), anthrax, psittacosis (parrot fever), or hanta virus, select a respirator appropriate for **nonemergency** activities recognized to present a health risk to workers **and** skip to Step 8.
- If respirator use will occur during **emergencies**, skip to Step 8 and document the analysis used to select the appropriate respirator.
 - Use Centers for Disease Control (CDC) selection guidance for exposures to specific biological agents when this guidance exists.
Visit <http://www.cdc.gov>.
- Step 3:** If the respiratory hazard is a pesticide, follow the respirator specification on the pesticide label **and** skip to Step 9.
- Step 4:** Determine the expected exposure concentration for each respiratory hazard of concern. Use the results from the evaluation required by chapter 296-841 WAC, Respiratory Hazards.

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Step 5: Determine if the respiratory hazard is classified as IDLH; if it's **not** IDLH skip to Step 7.

- The respiratory hazard **is** classified as IDLH if:
 - The atmosphere is oxygen deficient or oxygen enriched
 - or**
 - You **can't** measure or estimate your expected exposure concentration
 - or**
 - Your measured or estimated expected exposure concentration is greater or equal to the IDLH value in the NIOSH *Pocket Guide to Chemical Hazards*



Note:

- WISHA uses the IDLH values in the 1990 edition of the NIOSH *Pocket Guide to Hazardous Chemicals* to determine the existence of IDLH conditions. You may use more recent editions of this guide. Visit www.cdc.gov/niosh for more information.
- If your measured or estimated expected exposure concentration is below NIOSH's IDLH values, proceed to Step 7.

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Step 6: Select an appropriate respirator from one of the following respirators for IDLH conditions and skip to Step 8:

- Full-facepiece, pressure demand, self-contained breathing apparatus (SCBA) certified by NIOSH for a minimum service life of 30 minutes
- or**
- Full-facepiece, pressure demand air-line respirator equipped with an auxiliary self-contained air supply



Exemption:

If the respiratory hazard is oxygen deficiency **and** you can show oxygen concentrations can be controlled within the ranges listed in **Table 4** under **all** foreseeable conditions, you are allowed to select **any** type of SCBA or air-line respirator:

Table 4 Concentration Ranges for Oxygen Deficiency	
Altitude (as ft. above seal level)	Oxygen Concentration Range (as percent oxygen)
Below 3,001	16.0 -19.5
3,001 - 4, 000	16.4 -19.5
4,001 - 5,000	17.1 - 19.5
5,001 - 6,000	17.8 - 19.5
6,001 - 8,000	19.3 – 19.5
Above 8,000 feet the exception doesn't apply.	

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Step 7: Identify respirator types with assigned protection factors (APFs) from **Table 5** that are appropriate to protect employees from the expected exposure concentration.



Helpful Tool:

Using Assigned Protection Factors (APFs) for Respiratory Selection

This form will help you understand how to use and assign APFs.

You can find a copy of this form in the Resources section of this chapter.

Step 8: Consider hazards that could require selection of specific respirator types. For example, select full-facepiece respirators to prevent eye irritation or abrasive blasting helmets to provide particle rebound protection.

Step 9: Evaluate user and workplace factors that might compromise respirator performance, reliability or safety.

- If the respiratory hazard is a pesticide, follow the requirements on the pesticide label and skip to Step 11.

Examples:

- High humidity or temperature extremes in the workplace.
- Necessary voice communication.
- High traffic areas and moving machinery.
- Time or distance for escape.

Step 10: Follow **Table 6** requirements to select an air-purifying respirator.

- If Table 6 requirements can't be met, you must select an air-line respirator or an SCBA.

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Step 11: Make sure respirators you select are certified by the National Institute for Occupational Safety and Health (NIOSH).

- To maintain certification, make sure the respirator is used according to cautions and limitations specified on the NIOSH approval label.



Note:

While selecting respirators, you will need to select a sufficient number of types, models or sizes to provide for fit testing. You can also consider other respirator use issues, such as accommodating facial hair with a loose fitting respirator.



Helpful Tool:

Key Information about NIOSH Certified Respirators

This document will help you understand how to find and use NIOSH certification information. You can find a copy in the Resources section of this chapter.



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Use Table 5 to identify the assigned protection factor for different types of respirators.

Table 5 Assigned Protection Factors (APF) for Respirator Types	
<i>If the respirator is an</i>	<i>Then the APF is</i>
Air-purifying respirator with a: <ul style="list-style-type: none"> • Half-facepiece • Full-facepiece Note: Half-facepiece includes $\frac{1}{4}$ masks, filtering facepieces, and elastomeric facepieces.	10 100
Powered air-purifying respirator (PAPR) with a: <ul style="list-style-type: none"> • Loose-fitting facepiece • Half-facepiece • Full-facepiece, equipped with HEPA filters, chemical cartridges or canisters • Hood or helmet, equipped with HEPA filters, chemical cartridges or canisters 	25 50 1000 1000
Air-line respirator with a: <ul style="list-style-type: none"> • Half-facepiece and designed to operate in demand mode • Loose-fitting facepiece and designed to operate in continuous flow mode • Half-facepiece and designed to operate in continuous-flow, or pressure-demand mode • Full-facepiece and designed to operate in demand mode. • Full-facepiece and designed to operate in continuous-flow or pressure-demand mode • Helmet or hood and designed to operate in continuous-flow mode 	10 25 50 100 1000 1000
Self-contained breathing apparatus (SCBA) with a tight fitting: <ul style="list-style-type: none"> • Half-facepiece and designed to operate in demand mode • Full facepiece and designed to operate in demand mode • Full-facepiece and designed to operate in pressure-demand mode 	10 100 10,000
Combination respirators: <ul style="list-style-type: none"> • Find the APF for each type of respirator in the combination. • Use the lower APF to represent the combination 	The lowest value



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Use Table 6 to select air-purifying respirators for particle, vapor, or gas contaminants.

Table 6 Requirements for Selecting Any Air-purifying Respirator	
<i>If the contaminant is a</i>	<i>Then</i>
Gas or vapor	Provide a respirator with canisters or cartridges equipped with a NIOSH-certified, end-of-service-life indicator (ESLI) <i>or</i> If a canister or cartridge with an ESLI is <i>not</i> available, develop a cartridge change schedule to make sure the canisters or cartridges are replaced before they are no longer effective <i>or</i> Select an atmosphere-supplying respirator
Particle, such as a dust, spray, mist, fog, fume, or aerosol	Select respirators with filters certified to be at least 95% efficient by NIOSH. For example, N95s, R99s, P100s, or High Efficiency Particulate Air filters (HEPA) <i>or</i> You may select respirators NIOSH certified as "dust and mist," "dust, fume, or mist," or "pesticides." You can only use these respirators if particles primarily have a mass median aerodynamic diameter of at least 2 micrometers. <i>Note:</i> These respirators are no longer sold for occupational use.



Notes
